<u>AMENDMENTS TO THE CLAIMS</u>

Claim 1 (Currently Amended): A method of manufacturing a capacitor having a tantalum oxide film as an insulating film, said method comprising:

vapor-phase depositing a tantalum oxide film on a lower electrode comprising a ruthenium film;

treating the tantalum oxide film at a temperature of 300 to ~~650~~ <u>500</u> °C in an atmosphere of active oxygen species;

<u>then immediately</u> annealing the tantalum oxide film treated with the active oxygen species, at a temperature of 620 to 690°C, which temperature is lower than a crystallization temperature of tantalum oxide, in an inert atmosphere; and

forming an upper electrically conductive film on the annealed tantalum oxide film.

Claims 2-4 (Canceled)

Claim 5 (Currently Amended): A method of manufacturing a capacitor having a tantalum oxide film as insulating film, said method comprising:

vapor-phase depositing a tantalum oxide film on a lower electrode comprising a ruthenium film;

annealing the tantalum oxide film ~~treated with the active oxygen species,~~ at a temperature of 620 to 690°C, which temperature is lower than a crystallization temperature of tantalum oxide, in an inert atmosphere;

treating the annealed tantalum oxide film at a temperature of 300 to 650°C in an atmosphere of active oxygen species; and

forming an upper electrically conductive film on the tantalum oxide film treated with the active oxygen species.

Claims 6-8 (Canceled)

Claim 9 (Previously Presented): A method of manufacturing a capacitor having a tantalum oxide film as insulating film, said method comprising:

a first vapor-phase deposition step of vapor-phase depositing a first tantalum oxide film on a lower electrode;

a first annealing step of annealing the first tantalum oxide film at a temperature of 620 to 690°C, which temperature is lower than a crystallization temperature of tantalum oxide, in an inert atmosphere;

a first treatment step of treating the annealed first tantalum oxide film at a temperature of 300 to 650°C in an atmosphere of active oxygen species;

a second vapor-phase deposition step of vapor-phase depositing a second tantalum oxide film on the first tantalum oxide film treated with the active oxygen species;

a second treatment step of treating the second tantalum oxide film at a temperature of 300 to 650°C in an atmosphere of active oxygen species;

a second annealing step of annealing the second tantalum oxide film treated with the active oxygen species, at a temperature of 630 to 750°C, in an inert atmosphere; and

a step of forming an upper electrically conductive film on the annealed second tantalum oxide film.

Claims 10-11 (Canceled)

Claim 12 (Previously Presented): The method according to claim 9, wherein said lower electrode is formed of a metal-based electrically conductive material.

Claim 13 (Previously Presented): The method according to claim 12, wherein said metal-based material is a member selected from ruthenium, platinum, tungsten nitride, and titanium silicon nitride.

Claim 14 (Previously Presented): The method according to claim 9, wherein said step of forming the second tantalum oxide film, said second treatment with active species and said second annealing step are conducted sequentially at least once, before the formation of the upper conductive film.

Claim 15 (Previously Presented): The method according to claim 1, wherein the active oxygen species are generated by irradiating an ozone atmosphere with ultraviolet rays, by a remote oxygen plasma method, or by a remote N_2O plasma method.

Claim 16 (Previously Presented): The method according to claim 1, wherein the tantalum oxide film is treated in the atmosphere of active oxygen species at a temperature of 400 to 500°C.

Claim 17 (Previously Presented): The method according to claim 5, wherein the active oxygen species are generated by irradiating an ozone atmosphere with ultraviolet rays, by a remote oxygen plasma method, or by a remote N_2O plasma method.

Claim 18 (Previously Presented): The method according to claim 5, wherein the tantalum oxide film is treated in the atmosphere of active oxygen species at a temperature of 400 to 500°C.

Claim 19 (Previously Presented): The method according to claim 9, wherein the active oxygen species are generated by irradiating an ozone atmosphere with ultraviolet rays, by a remote oxygen plasma method, or by a remote N_2O plasma method.

Claim 20 (Previously Presented): A method of manufacturing a capacitor having an insulating film comprising a metal oxide, said method comprising:

a step of forming a lower electrode comprising a metal-based material on a substrate;

a step of forming a tantalum oxide film on the lower electrode;

a first annealing treatment step of treating the substrate on which the tantalum oxide film has been formed, at a temperature of about 620°C to about 690°C, which temperature is lower than a crystallization temperature of tantalum oxide, in an inert atmosphere;

a second annealing treatment step of treating the substrate on which the tantalum oxide film has been formed, at a temperature of 300 to 690°C in an atmosphere of active oxygen species; and

a step of forming an upper electrode on the annealed tantalum oxide film.

Claim 21 (Previously Presented): The method according to claim 20, wherein the metal-based material is a member selected from the group consisting of tungsten nitride, titanium silicon nitride and platinum.

Claim 22 (Previously Presented): The method according to claim 20, wherein the second annealing treatment step is conducted at a temperature of 400 to 500°C.

Claim 23 (Currently Amended): The method according to claim 21, wherein the second annealing step is conducted after the first annealing step, and then the step of forming the upper electrode is conducted.

Claim 24 (Previously Presented): The method according to claim 20, wherein the active oxygen species are generated by irradiating an ozone atmosphere with ultraviolet rays, by a remote oxygen plasma method, or by a remote N_2O plasma method.